

WHAT IS CLAIMED IS:

1. An image recording material sheet conveying device comprising:

a cassette accommodating section having a cassette in which image recording materials and interleaf sheets are accommodated in a state of being stacked alternately, where the image recording material is sheet-shaped and has a support and an image recording surface is formed on one surface of the support, and the interleaf sheet is sheet-shaped and is for protecting the image recording surface;

a take-out mechanism taking a pair of the image recording material and the interleaf sheet out from the cassette in a state in which the interleaf sheet is superposed on the image recording material;

a conveying mechanism receiving the pair of the image recording material and the interleaf sheet from the take-out mechanism, and conveying the pair of the image recording material and the interleaf sheet in a predetermined conveying direction along a conveying path;

a peeling mechanism peeling, at the conveying path, the interleaf sheet from the image recording material; and

an interleaf sheet conveying mechanism conveying the interleaf sheet, which has been peeled-off, along a path which is different than the conveying path.

2. The sheet conveying device of claim 1, wherein the cassette accommodating section has at least two cassettes which are disposed at different positions in a vertical direction, and the take-out mechanism selects any one cassette, and takes

the pair of the image recording material and the interleaf sheet out from said cassette.

3. The sheet conveying device of claim 1, wherein the take-out mechanism takes the pair of the image recording material and the interleaf sheet out from the cassette such that the interleaf sheet is positioned substantially at a top side and the image recording material is positioned at a bottom side.

4. The sheet conveying device of claim 1, wherein the take-out mechanism has a suction mechanism for holding the pair of the image recording material and the interleaf sheet.

5. The sheet conveying device of claim 1, wherein the take-out mechanism holds the pair of the image recording material and the interleaf sheet from an interleaf sheet side.

6. The sheet conveying device of claim 1, wherein the image recording materials are accommodated in the cassette with the image recording surfaces facing downward, and the take-out mechanism takes the pair of the image recording material and the interleaf sheet out with the interleaf sheet superposed on the image recording material, and inverts the pair and transfers the pair to the conveying mechanism.

7. The sheet conveying device of claim 1, wherein the image recording materials are accommodated in the cassette with the image recording surfaces facing

upward, and the take-out mechanism takes the pair of the image recording material and the interleaf sheet out with the interleaf sheet superposed on the image recording material, and transfers the pair to the conveying mechanism with the interleaf sheet positioned as is on the image recording material.

8. The sheet conveying device of claim 1, wherein the peeling mechanism has:

a retarding roller held in a state of being separated from the conveying path, and disposed so as to be able to approach and move away from the interleaf sheet conveyed on the conveying path, and contacting the interleaf sheet and being rotated so as to impart conveying force to the interleaf sheet in a direction opposite to the conveying direction;

a leading end detecting sensor provided at a conveying direction downstream side of the retarding roller, and detecting a leading end portion of one of the interleaf sheet and the image recording material; and

a moving mechanism which, on the basis of results of detection of the leading end detecting sensor, moves the retarding roller so as to make the retarding roller contact the interleaf sheet conveyed on the conveying path,

wherein due to the retarding roller contacting the interleaf sheet, the interleaf sheet is returned in the direction opposite to the conveying direction, and the interleaf sheet is guided to the path which is different than the conveying path.

9. The sheet conveying device of claim 1, wherein the interleaf sheet conveying mechanism has an interleaf sheet stacking section, and the interleaf sheet which has been separated is conveyed to the interleaf sheet stacking section.

10. An automatic image recording system comprising:

a cassette accommodating section having a cassette in which image recording materials and interleaf sheets are accommodated in a state of being stacked alternately, where the image recording material is sheet-shaped and has a support and an image recording surface is formed on one surface of the support, and the interleaf sheet is sheet-shaped and is for protecting the image recording surface;

a take-out mechanism taking a pair of the image recording material and the interleaf sheet out from the cassette in a state in which the interleaf sheet is superposed on the image recording material;

a conveying mechanism receiving the pair of the image recording material and the interleaf sheet from the take-out mechanism, and conveying the pair of the image recording material and the interleaf sheet in a predetermined conveying direction along a conveying path;

a peeling mechanism peeling, at the conveying path, the interleaf sheet from the image recording material;

an interleaf sheet conveying mechanism conveying the interleaf sheet, which has been peeled-off, along a path which is different than the conveying path; and

an exposure station having a drum and a recording head, and training the image recording material, which has been separated from the interleaf sheet conveyed by the conveying mechanism, around the drum, and while rotating the drum at high speed, illuminating a light beam from the recording head, and moving the recording head relative to the drum, and thereby recording an image on the image recording material.

11. An image recording material sheet conveying device comprising:

a cassette accommodating section accommodating at least two cassettes which are disposed one above another in a vertical direction and in which image recording materials and interleaf sheets are accommodated in a state of being stacked alternately, where, at the image recording material, an image recording surface is provided on a support, and the interleaf sheet is thin-film-shaped and protects the image recording surface;

a carry-out mechanism simultaneously carrying the image recording material and the interleaf sheet as a pair out from the cassette in a state in which the interleaf sheet and the image recording material are superposed with the interleaf sheet on a top side and the image recording material at a bottom side;

a conveying mechanism which, after the pair of the image recording material and the interleaf sheet have been selectively carried out from the plural cassettes by the carry-out mechanism, conveys the pair of the image recording material and the interleaf sheet from a carry-out position along a predetermined conveying path;

a peeling mechanism provided along the conveying path of the conveying mechanism, and peeling the interleaf sheet from the image recording material; and

an interleaf sheet discarding mechanism discarding the interleaf sheet, which has been peeled-off, along a different path than the conveying path of the conveying mechanism.

12. The sheet conveying device of claim 11, wherein the image recording surface of the image recording material in the cassette faces downward, and the interleaf

sheet, which forms the pair with the image recording material, is disposed on a top surface of the image recording material, and at a time of carry-out by the carry-out mechanism, the carry-out mechanism transfers the image recording material and the interleaf sheet to the conveying path while simultaneously inverting the image recording material and the interleaf sheet.

13. The sheet conveying device of claim 11, wherein the image recording surface of the image recording material in the cassette faces upward, and the interleaf sheet, which forms the pair with the image recording material, is disposed on the image recording surface, and at a time of carry-out by the carry-out mechanism, the carry-out mechanism transfers the image recording material and the interleaf sheet to the conveying path while maintaining a top/bottom positional relationship of a time when the image recording material and the interleaf sheet were accommodated in the cassette.

14. The sheet conveying device of claim 11, wherein the peeling mechanism has:

- a retarding roller provided at an interleaf sheet side of the conveying path, and able to approach and move away from the conveying path of the interleaf sheet, and rotating so as to impart conveying force in a direction opposite to the conveying direction;

- a leading end detecting sensor provided at a conveying direction downstream side of the retarding roller, and detecting a leading end portion of one of the interleaf sheet and the image recording material;

- a moving mechanism which holds the retarding roller in a state of being separated from the conveying path, and which, at a point in time when the leading

end detecting sensor detects one of the interleaf sheet and the image recording material, moves the retarding roller such that the retarding roller approaches the conveying path; and

a guiding mechanism which, due to the retarding roller being made to contact the interleaf sheet by the moving mechanism, returns the interleaf sheet in the direction opposite to the conveying direction and guides the interleaf sheet to the different path.

15. An automatic image recording system comprising:

(A) a sheet conveying device having:

(i) a cassette accommodating section accommodating at least two cassettes which are disposed one above another in a vertical direction and in which image recording materials and interleaf sheets are accommodated in a state of being stacked alternately, where, at the image recording material, an image recording surface is provided on a support, and the interleaf sheet is thin-film-shaped and protects the image recording surface;

(ii) a carry-out mechanism simultaneously carrying the image recording material and the interleaf sheet as a pair out from the cassette in a state in which the interleaf sheet and the image recording material are superposed with the interleaf sheet on a top side and the image recording material at a bottom side;

(iii) a conveying mechanism which, after the pair of the image recording material and the interleaf sheet have been selectively carried out from the plural cassettes by the carry-out mechanism, conveys the pair of the image recording material and the interleaf sheet from a carry-out

position along a predetermined conveying path;

(iv) a peeling mechanism provided along the conveying path of the conveying mechanism, and peeling the interleaf sheet from the image recording material; and

(v) an interleaf sheet discarding mechanism discarding the interleaf sheet, which has been peeled-off, along a different path than the conveying path of the conveying mechanism; and

(B) an exposing device having a drum and a recording head, and in a state in which the image recording material, which has been separated from the interleaf sheet conveyed by the conveying mechanism, is trained around the drum, while rotating the drum at high speed, illuminating a light beam from the recording head, and moving the recording head in an axial direction to the drum, and thereby recording an image on the image recording material.